U.S. DEPARTMENT OF COMMERCE
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COMPARISON OF NTAC, NAS, AND PROPOSED EPA NUMERICAL CRITERIA FOR WATER QUALITY

ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C.

1975

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15. Supplementary Notes

16. Abstracts

Numerical criteria for water quality of NTAC, NAS, and EPA are compared in the tables provided.

17. Key Words and Document Analysis. 17a. Descriptors

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Pesticides	Freshwater Aquatic Life			Mammal Aquatic Life		
	EPA	NAS	NTAC	EPA	NAS	NTAC
Insecticides						
Organochlorine	(ug/l)[a]	(ug/l)[a]	(ug/l)	ug/l	ug/l	ug/l
Aldrin	0.01	0.01[c]				0.05
DDT	0.002	0.002[b]	Addition			0.0
TDE	0.006	0.006	of			0.0
Dieldrin	0.005	0.005[c]	organo-			0.0
Chlordane	0.04	0.04[c]	chlorines	1/100 96 hr.		0.0
Endosulfan	0.003	0.003[c]	should be	LC_{50} for all		0.0
Endrin	0.002	0.002[c]	avoided.	pesticides		0.0
Heptachlor	0.01	0.01[c]				0.0
Lindane	0.02	0.02[c]				0.0
Methoxychlor	0.005	0.005				0.0
Toxaphene	0.01	0.01[c]				0.0
BHC	-	-				0.0
Peythane	-	-				
benzene heptachloride	-	- [c]				
Organophosphorus						
Azinphosmethyl	0.001	0.001	nonpersistent			
Ciodrin	0.1	0.1	or noncumulative			0.0
Coumaphos	0.001	0.001	pesticides 1/10			
Diazinon	0.009	0.009	96 hr TLm with			
Dichlorvos	0.001	0.001	24 hr average			
Dioxathion	0.09	0.09	not exceeding			
Disulfonton	0.05	0.05	1/20 96 hr. TLm			
Dursban	0.001	0.001				0.0
Ethion	0.02	0.02				
EPN	0.06	0.06				
Fenthion	0.006	0.006				0.0
Malathion	0.008	0.008				
Mevinphos	0.002	0.002				
Nalen	0.004	0.004				0.0
Oxygemeton methyl	0.4	0.4				
Parathion	0.001	0.001				0.0
Phosphamidon	0.03	0.03	other pesticide			
TEPP	0.3	0.3	1/20 96 hr. TLm			
Trichlorophon	0.002	0.002	with 24 hr. ave.			0.5
Ronnel	-	-	not to exceed 1/100			0.0
			96 hr. TLm			

	Mammal Aquatic Life			Marine Wildlife		
	EPA	NAS	NTAC	EPA	NAS	NTAC
	ug/l	ug/l	ug/l	concentrations of aldrin dieldrin endrin and hepta-chlor epoxide should not exceed 50 mg/Kg (wet weight) in a homo-genate of 25 or more whole fish of any species that is con-sumed by birds and mammals in the size range consumed.		no pesticides in water to the extent that the health and well being are affected.
			0.05			
			0.05			
			0.05			
			0.05			
	1/100 96 hr. LC_{50} for all pesticides		0.05			
			0.05			
			0.05			
			0.05			
			0.05			
			0.05			
			0.05			
			0.05			
tent ulative s 1/10 with rage ding r. TLm			0.05	DDT and deviations and other organo-chlorine pesticides.		
			0.05			
			0.05	In freshwater DDT concentration in aquatic plants and animals should not exceed 1 mg/Kg or a wet weight basis.		
			0.05			
			0.05			
ticide r. TLm r. ave. ceed 1/100 n			0.05			
			0.05			

Pesticides (cont.)	EPA	NAS	NTAC	EPA
Carbamates				
Carbaryl	0.02	0.02		
Zecten	0.1	0.1		
Arsenicals		[b] residues in fish not to exceed 110 mg/Kg or [c] 0.1 mg/Kg singly or in combination		
Botanicals				
2, 4-D Compounds				
2, 4, 5 - T compounds				
Pthalic acid compounds				
Trizine compounds				
Substituted area compounds				

NTAC	EPA	NAS	NTAC	EPA	NAS	NTAC
			1/100 96 hr. TLm or 10 mg/l maximum			
esidues			"			
ish not			"			
xceed			"			
mg/Kg			"			
r			"			
.1 mg/Kg			"			
ly or in			"			
ination			"			

Pesticides	Freshwater Aquatic Life			Mammal Aquatic Life	
	EPA	NAS	NTAC	EPA	NAS
Insecticides					
Organochlorine	(ug/l)[a]	(ug/l)[a]	(ug/l)	ug/l	ug/l
Aldrin	0.01	0.01[c]			
DDT	0.002	0.002[b]	Addition		
TDE	0.006	0.006	of		
Dieldrin	0.005	0.005[c]	organo-		
Chlordane	0.04	0.04[c]	chlorines	1/100 96 hr.	
Endosulfan	0.003	0.003[c]	should be	LC_{50} for all	
Endrin	0.002	0.002[c]	avoided.	pesticides	
Heptachlor	0.01	0.01[c]			
Lindane	0.02	0.02[c]			
Methoxychlor	0.005	0.005			
Toxaphene	0.01	0.01[c]			
BHC	-	-			
Peythane	-	-			
benzene heptachloride	-	- [c]			
Organophosphorus					
Azinphosmethyl	0.001	0.001	nonpersistent		
Ciodrin	0.1	0.1	or noncumulative		
Coumaphos	0.001	0.001	pesticides 1/10		
Diazinon	0.009	0.009	96 hr TLm with		
Dichlorvos	0.001	0.001	24 hr average		
Dioxathion	0.09	0.09	not exceeding		
Disulfonton	0.05	0.05	1/20 96 hr. TLm		
Dursban	0.001	0.001			
Ethion	0.02	0.02			
EPN	0.06	0.06			
Fenthion	0.006	0.006			
Malathion	0.008	0.008			
Mevinphos	0.002	0.002			
Nalen	0.004	0.004			
Oxygemeton methyl	0.4	0.4			
Parathion	0.001	0.001			
Phosphamidon	0.03	0.03	other pesticide		
TEPP	0.3	0.3	1/20 96 hr. TLm		
Trichlorophon	0.002	0.002	with 24 hr. ave.		
Ronnel	-	-	not to exceed 1/100		
			96 hr. TLm		

	Mammal Aquatic Life			Marine Wildlife		
	EPA	NAS	NTAC	EPA	NAS	NTAC
	ug/l	ug/l	ug/l	concentrations of		no pesticides
			0.05	aldrin dieldrin		in water to
			0.05	endrin and hepta-		the extent
			0.05	chlor epoxide		that the
			0.05	should not exceed		health and
	1/100 96 hr.		0.05	50 mg/Kg (wet		well being
	LC_{50} for all		0.05	weight) in a homo-		are affected.
	pesticides		0.05	genate of 25 or more		
			0.05	whole fish of any		
			0.05	species that is con-		
			0.05	sumed by birds and		
			0.05	mammals in the size range		
			0.05	consumed.		
			0.05			
tent						
ulative						
s 1/10			0.05	DDT and deviations		
with				and other organo-		
rage				chlorine pesticides.		
ding						
r. TLm						
			0.05			
			0.05	In freshwater DDT		
				concentration in		
				aquatic plants and		
			0.05	animals should not		
				exceed 1 mg/Kg or		
			0.05	a wet weight basis.		
ticide						
r. TLm						
r. ave.			0.05			
ceed 1/100			0.05			
m						

Pesticides (cont.)	EPA	NAS	NTAC	EPA
Carbamates				
Carbaryl	0.02	0.02		
Zecten	0.1	0.1		
Arsenicals		b/ residues		
Botanicals		in fish not		
2, 4-D Compounds		to exceed		
2, 4, 5 - T compounds		110 mg/Kg		
Pthalic acid compounds		or		
Trizine compounds		c/ 0.1 mg/Kg		
Substituted area compounds		singly or in combination		

AS	NTAC	EPA	NAS	NTAC	EPA	NAS	NTAC
02				1/100 96 hr. TLm or 10 mg/l maximum			
residues fish not exceed 0 mg/Kg or 0.1 mg/Kg ngly or in nbination				" " " " " " " "			

	Agriculture (Irrigation)			Agriculture (Livestock)			Freshwater (Aquatic Life)			Freshwater (Wildlife)		
	EPA	NAS	NTAC	EPA	NAS	NTAC	EPA	NAS	NTAC	EPA	NAS	NTAC
9. Cadmium	0.01 mg/l 0.05 mg/l	0.01 mg/l 0.05 mg/l	0.005 mg/l 0.05 mg/l	0.05 mg/l	0.05 mg/l	L.01 mg/l	0.03 mg/l[1] 0.004 mg/l[2] 0.003 mg/l[3] 0.0004 mg/l[4]	0.03 mg/l[1] 0.004 mg/l[2] 0.003 mg/l[3] 0.0004 mg/l[4]	1/30 TL_m[5] 1/500 TL_m[6]	-	-	-
10. Chlorine	--	--	--	--	--	--	0.003 mg/l 0.05 mg/l (30 min.)	0.003 mg/l 0.05 mg/l (30 min.)	--	-	-	-
11. Chromium	0.1 mg/l 1.0 mg/l	0.1 mg/l 1.0 mg/l	5.0 mg/l 20.0 mg/l	1.0 mg/l	1.0 mg/l	<0.05	0.05 mg/l	.05 mg/l	0.02 mg/l[8]	-	-	-
12. Cobalt	0.05 mg/l 5.0 mg/l	0.05 mg/l 5.0 mg/l	0.2 mg/l 10.2 mg/l	1.0 mg/l	1.0 mg/l	--	--	--	--	-	-	-
13. Copper	0.20 mg/l 5.0 mg/l	0.20 mg/l 5.0 mg/l	0.20 mg/l 5.0 mg/l	0.5 mg/l	0.5 mg/l	--	1/10 LC_{50}	1/10 TC_{50}[4]	1/10 TL_m 1/30 TL_m	-	-	-
14. Fluorine Sandy Soil	2.0 mg/l 1.0 mg/l 15.0 mg/l	2.0 mg/l 1.0 mg/l 15.0 mg/l	-- -- --	2.0 mg/l	2.0 mg/l	L2.4	--	--	--	-	-	-
15. Iron	5.0 mg/l 20.0 mg/l	5.0 mg/l 20.0 mg/l	-- --	NL	NL	--	--	--	--	-	-	-
16. Lead	5.0 mg/l 10.0 mg/l	5.0 mg/l 10.0 mg/l	5.0 mg/l 20.0 mg/l	0.1 mg/l	0.05 mg/l	L.05 mg/l	0.03 mg/l	0.03 mg/l	--	-	marine wildlife criteria	-
17. Lithium	2.5 mg/l 0.075 mg/l	2.5 mg/l 0.075 mg/l	5.0 mg/l 5.0 mg/l	--	--	--	--	--	--			
18. Manganese	0.20 mg/l 10.0 mg/l	0.20 mg/l 10.0 mg/l	2.0 mg/l 20.0 mg/l	NL	NL	--	--	--	--	-	-	-
										-	-	-

Freshwater (Aquatic Life)			Freshwater (Wildlife)			Freshwater (Public Supply)			Marine Water (Aquatic Life)			Recreational Waters		
	NAS	NTAC	EPA	NAS	NTAC	EPA	NAS	NTAC	EPA	NAS	NTAC	EPA	NAS	NTAC
[1]	0.03 mg/l[1]	1/30 TL_m[5]	–	–	–	0.1 mg/l	0.1 mg/l	0.1 mg/l	1/100 LC_{50}[7]	1/100 LC_{50}[7]	--			
[2]	0.004 mg/l[2]	1/500 TL_m[6]							0.1 mg/l	0.01 mg/l				
[3]	0.003 mg/l[3]									0.0082 mg/l				
[4]	0.0064 mg/l[4]													
/l	0.003 mg/l	--												
/l	0.08 mg/l		-	-	-	-	-	-	1/10 LC_{50}	1/10 LC_{50}				
.)	(30 min.)								0.01 mg/l	0.01 mg/l	--			
/l	.05 mg/l	0.02 mg/l[8]	-	-	-	0.5 mg/l	0.5 mg/l	0.5 mg/l	100 LC_{50}	0.1	--			
									0.1 mg/l	0.05				
	--	--	-	-	-	-	-	-	-	-	- -			
[9]	1/10 TC_{50}[9]	1/10 TL_m												
		1/30 TL_m	-	-	-	1.0 mg/l	1.0 mg/l	1.0 mg/l	1/100 LC_{50}	1/100 LC_{50}	- -			
	--	--												
			-	-	-	-	14-2.4 depending upon air temperature	0.8-1.7 mg/l depending upon air temperature	1/10 LC_{50} .5 mg/l	1/10 LC_{50} 1.5 mg/l 0.5 mg/l	drinking water criteria			
	--	--												
/l	0.03 mg/l	--	-	-	-	0.3 mg/l	0.3 mg/l	0.3 mg.l	0.3 mg/l	0.3 mg/l 0.05 mg/l	- -			
			-	marine wildlife criteria	-	0.05 mg/l	0.05 mg/l	0.05 mg/l	1/50 LC_{50} 1/100 LC_{50} 0.05 mg/l	1/50 LC_{50} 1/100 LC_{50} 0.05 mg/l 0.01 mg/l	- -			
	--	--												
	--	--	-	-	-	-	-	-	1/100 LC_{50} 0.005 mg/l	-	- -			
			-	-	-	0.05 mg/l	0.05 mg/l	0.5 mg/l	1/50 LC_{50} 0.1 mg/l	1/50 LC_{50} 0.1 mg/l 0.02 mg/l	--			

Constituent	Agriculture (Irrigation)			Agriculture (Livestock)			Freshwater (Aquatic Life)			Freshwater (Wildlife)		
	EPA	NAS	NTAC	EPA	NAS	NTAC	EPA	NAS	NTAC	EPA	NAS	NTAC
19. Mercury	--	--	--	1.0 mg/l	10.0 mg/l	--	0.2 mg/l TOTAL 0.05 mg/l average 0.5 mg/l body burden	0.2 mg/l TOTAL 0.05 mg/l average 0.5 mg/l body burden	--	$0.5 mg/g$ (Fish)	$0.5 mg/g$ (Fish)	-
20. Molybdenum	0.01 mg/l 0.05 mg/l	0.01 mg/l 0.05 mg/l	0.005 mg/l 0.05 mg/l	NL	NL	--	--	--	--	-	-	-
21. Nickel	0.2 mg/l 2.0 mg/l	0.2 mg/l 2.0 mg/l	0.5 mg/l 2.0 mg/l	--	--	--	1/50 LC_{50}	1/50 LC_{50}		-	-	-
22. Phosphorus (elemental)	--	--	--	--	--	--	--	--	--	-	-	-
23. Selenium	0.02 mg/l	0.02 mg/l 0.02 mg/l	0.05 mg/l 0.05 mg/l	0.05 mg/l	0.05 mg/l	0.01 mg/l	--	--	--			
24. Sodium	NL	--	NL	--	--	--	--	--	--	-	-	-
25. Silver	--	--	--	--	--	--	--	--	--	-	-	-
26. Tin	--	--	--	--	--	--	--	--	--			
27. Thallium	--	--	--	--	--	--	--	--	--	-	-	-
28. Uranium	--	--	--	--	--	--	--	--	--	-	-	-
29. Vanadium	--	--	10.0 mg/l 10.0 mg/l	0.1 mg/l	0.1 mg/l	--	--	--	--	-	-	-
30. Zinc	--	2.0 mg/l 10.0 mg/l	5.0 mg/l 10.0 mg/l	25.0 mg/l	25.0 mg/l	--	5/1000 LC_{50}	5/1000 LC_{50}	1/100 LC_{50}	-	-	-
										-	-	-

Freshwater (Aquatic Life)			Freshwater (Wildlife)			Freshwater (Public Supply)			Marine Water (Aquatic Life)			Recreational Waters		
	NAS	NTAC	EPA	NAS	NTAC	EPA	NAS	NTAC	EPA	NAS	NTAC	EPA	NAS	NTAC
	0.2 mg/l TOTAL	--	0.5 mg/g (fish)	0.5 mg/g (fish)	-	0.002 mg/l	0.002 mg/l	-	1/100 LC_{50} 0.1 mg/l	NL 0.1 mg/l NL				
	0.05 mg/l average 0.5 mg/l body burden		-	-	-	-	-	-	1/20 LC_{50}	1/20 LC_{50} 1/50 LC_{50}				
	--	--	-	-	-	-	-	-	1/50 LC_{50} 0.1 mg/l	1/50 LC_{50} to mg/l 0002 mg/l				
LC_{50}	1/50 LC_{50}		-	-	-	NL	NL	-	1/800 LC_{50} 0.1 mg/l	1/100 LC_{50} 8.0 mg/l				
	--	--	-	-	-	0.1 mg/l	0.1 mg/l	0.1 mg/l	1/100 LC_{50} 0.01 mg/l	1/100 LC_{50} 0.01 mg/l 0.005 mg/l				
	--	--	-	-	-	NL	NL	-	-	-				
	--	--	-	-	-	0.85 mg/l	NL	0.05 mg/l	1/20 LC_{50} 5.0 mg/l	1/20 LC_{50} 5.0 mg/l 1.0 mg/l				
	--	--	-	-	-	-	-	-	-	-				
	--	--	-	-	-	-	-	-	1/20 LC_{50} 0.1 mg/l	0/1 mg/l 0.05 mg/l				
	--	--	-	-	-	-	NL	-	1/100 LC_{50} 0.5 mg/l	1/100 LC_{50} 0.5 mg/l 0.1 mg/l				
LC_{50}	S/1000 LC_{50}	1/100 LC_{50}	-	-	-	-	-	-	1/20 LC_{50}	1/20 LC_{50}				
			-	-	-	5.0 mg/l	5.0 mg/l	5.0 mg/l	1/100 LC_{50} 2/ 0.1 mg/l 0.2 mg/l					

CONSTITUENT	AGRICULTURE (Irrigation)			AGRICULTURE (Livestock)			FRESHWATER (Aquatic Life)			FRESHWATER (Wild Life)	
	EPA	NAS	NTAC	EPA	NAS	NTAC	EPA	NAS	NTAC	EPA	NAS
1. PH	4.5 - 9.0	4.5 - 9.0	4.5 - 9.0	--	--	--	6 - 9	6.5 - 8.5 9] 6.0 - 9.0 9] 6.0 - 9.0 10] 5.5 - 9.5 10]	6-9	6-9	7 - 9.2
2. Alkalinity	--	--	--	--	--	--	75% of Natural	75% of Natural	∓20 mg/l	30-130 mg/l	30-130 mg/l 11]
3. Acidity	--	--	--	--	--	--	No Addition		No Addition	--	--
4. Carbon Dioxide-5	--	--	--	--	--	25 mg/l	--	--	--	--	--
5. BOD	NL	NL	NL	--	--	--	--	--	--	--	--
6. Bicarbonates	NL	NL	--	--	--	--	--	--	--	--	--
7. Ammonia	--	--	--	--	--	--	1/20 LC_{50} (0.02 mg/l)	EPA	Flow through bioassay	--	--
8. Nitrates	NL	NL	--	100 mg/l (NO_3 + NO_2)	100 mg/l 10 mg/l	--	--	Maintain NO_3-P ratio Maintain NH_3-P ratio	--	--	--

9] Δ ∓ 0.5 units
10] Δ ∓ 1.5 units
11] Δ ∓ 50 mg/l from natural

	FRESHWATER (Wild Life)			FRESHWATER (Public Supply)			MARINE WATER (Aquatic Life)			RECREATIONAL WATERS		
NAS	NTAC	EPA	NAS	NTAC	EPA	NAS	NTAC	EPA	NAS	NTAC	EPA	NAS	NTAC
6.5 - 8.5 9] 6.0 - 9.0 9] 6.0 - 9.0 10] 5.5 - 9.5 10]	6-9	6-9	7 - 9.2	7 - 9.2	5-9	5-9	6-8.5	6.5 - 8.5	6.5 - 8.5 10]	6.7 - 8.5	6.8 - 8.3		5-9 maximum 6.5-8.3 preferred
75% of Natural	320 mg/l	30-130 mg/l	30-130 mg/l 11]	30-130 mg/l 11]	NL	NL	NL	--	--	--	--	--	--
	No Addition	--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	HCO_3	--	--	--
EPA	Flow through bioassay	--	--	--	0.5 mg/l	0.5 mg/l	0.5 mg/l	1/10 LC_{50} 0.4 mg/l	1/10 LC_{50} 0.4 0.01	1/20 LC_{50}	--	--	--
Maintain NO_3-P ratio Maintain NH_4-P ratio	--	--	--	--	10 mg/l 1 mg/l	10 mg/l 1.0 mg/l	10 mg/l 10 mg/l	AL		nutrients and nuisance organism 1. No change in basin structure 2. Artificial enrichment should not alter biota 3. Maintain the NO_3 - PO_4 ratio	--	--	--

CONSTITUENT	AGRICULTURE (Irrigation)			AGRICULTURE (Livestock)			FRESHWATER (Aquatic Life)			FRESHWATER (Wild Life)		
	EPA	NAS	NTAC	EPA	NAS	NTAC	EPA	NAS	NTAC	EPA	NAS	NTAC
9. Nitrites	NL	--	--	10 mg/l	--	--	--	Maintain NO_3 - P ratio Maintain NH_4 - P ratio	--	--	--	--
10. Phosphorous								Maintain NO_3 - P ratio Maintain NH_4 - P ratio				
11. Sulfates	--	--	--	--	--	--	--	--	--	--	--	--
12. Sulfides	--	--	--	--	--	--	0.002 mg/l	--	--	--	--	--
13. Chloride												

ife)		FRESHWATER (Wild Life)			FRESHWATER (Public Supply)			MARINE WATER (Aquatic Life)		RECREATIONAL WATERS			
NAS	NTAC	EPA	NAS	NTAC	EPA	NAS	NTAC	EPA	NAS	NTAC	EPA	NAS	NTAC
Maintain NO_3 - P ratio Maintain NH_4 - P ratio	--	--	--	--	--	--	--	--	--	nutrients and nuisance organism 1. No change in basin structure 2. Artificial enrichment should not alter biota 3. Maintain the NO_3 - PO_4 ratio	--	--	--
Maintain NO_3 - P ratio Maintain NH_4 - P ratio										nutrients and nuisance organism 1. No change in basin structure 2. Artificial enrichment should not alter biota 3. Maintain the NO_3 - PO_4 ratio			
--	--	--	--	--	250 mg/l	250 mg/l	250 mg/l						
--	--	--	--	--	--	--	--	--	1/10 LC_{50} .01 mg/l .005 mg/l	1/20 LC_{50}			

CONSTITUENT	AGRICULTURE (Irrigation)			AGRICULTURE (Livestock)			FRESHWATER (Aquatic Life)			FRESHWATER (Wild Life)		
	EPA	NAS	NTAC	EPA	NAS	NTAC	EPA	NAS	NTAC	EPA	NAS	NTAC
14. Salinity		TDS	500 - 5000 mg/l	3000 mg/l soluble salts	--	--	--	--	--	no rapid fluctuation	no rapid fluctuation	1-4 fluc... perc... dep... upo... con...
15. Dissolved Solids	2000 - 5000 mg/l tolerant 500 - 1000 mg/l sensitive	2000 - 5000 mg/l tolerant 500 - 1000 mg/l sensitive	L 500 mg/l tolerant L 5000 mg/l sensitive	--	--	1000 mg/l	Bioassays	--	50 milesmoles 1/3 increase	--	--	--
16. Hardness	--	--	--	--	--	--	See Dissolved Solids	--	NL	--	--	--
17. Suspended and Settleable Solids	NL	NL	--	--	--	--	80 mg/l	25 mg/l 80 mg/l 400 mg/l	No addition	minimized	minimized	excl... from habi...
18. Turbidity and Light Penetration	--	--	--	--	--	--	10% change incompensation point	10% change incompensation point	streams 50 JTU a] 10 JTU b] lakes 25 JTU a] 10 JTU b]	10% change in compensation point	--	5% ... ligh... perc... to ...
19. Color	--	--	--	--	--	--	10% change incompensation point	10% change incompensation point	10% incident surface light to reach bottom	--	--	--

a] warm water
b] cold water

		FRESHWATER (Wild Life)			FRESHWATER (Public Supply)			MARINE WATER (Aquatic Life)			RECREATIONAL WATERS		
NAS	NTAC	EPA	NAS	NTAC	EPA	NAS	NTAC	EPA	NAS	NTAC	EPA	NAS	NTAC
--	--	no rapid fluctuation	no rapid fluctuation	1-4 700 fluctuation permitted depending upon concentration	--	--	--	--	--	10% change			
--	50 milesmoles 1/3 increase	--	--	--	NL	NL	500 mg/l	--	--	--			
--	NL	--	--	--	NL	NL	--	--	--	--	--	--	--
25 mg/l 80 mg/l 400 mg/l	No addition	minimized	minimized	excluded from habitat	--	--	NL	--	NL	None to be introduced			
10% change incompen- sation point	streams 50 JTU a] 10 JTU b] lakes 25 JTU a] 10 JTU b]	10% change in compen- sation point	--	5% surface light penetration to 6' depth	--	--	NL	--	NL	No change	4' seachi disc		
10% change incompen- sation point	10% incident surface light to reach bottom	--	--	--	--	--	--	--	--	--	--	--	--

CONSTITUENT	AGRICULTURE (Irrigation)			AGRICULTURE (Livestock)			FRESHWATER (Aquatic Life)			FRESHWATER (Mild Life)	
	EPA	NAS	NTAC	EPA	NAS	NTAC	EPA	NAS	NTAC	EPA	NAS
20. Tainting Substances and Odor	--	--	--	--	--	--	Bioassays & organoleptic tests	Bioassays and organoleptic tests	excluded at levels which produce tainting	--	--
21. Oils	--	--	--	--	--	--	1. none visible on surface 2. 1000 mg/kg Hexane extractable substances insediments 3. 1/20 LC_{50}	same as EPA	1. No visible film 2. No oily odors 3. No deposits 4. Not to become effective toxicant	no visible oils	no visible oils
22. Carbon adsorbable CCE CAE	--	--	--	--	--	--	--	--	--	--	--
23. Foaming agents ABL LAS MBA NTA	--	--	--	--	--	--	1/20 LC_{50} 0.2 mg/l (LAS)	1/20 LC_{50} 0.2 mg/l (LAS)	1/7 48 hr. TLM 0.2 mg/l (LAS) 1/7 48 hr. TLM 1/7 48 hr. TLM 1.0 mg/l (ABS)	--	--
24. Phenols	--	--	--	--	--	--	1/20 LC_{50} 0.1 mg/l	1/20 LC_{50} 0.1 mg/l	--	--	--
25. Cyanides	--	--	--	--	--	--	1/20 LC_{50}	1/20 LC_{50} 0.005 mg/l	Flo-thru bioassays	--	--
26.											

		FRESHWATER (Aquatic Life)			FRESHWATER (Public Supply)			MARINE WATER (Aquatic Life)			RECREATIONAL WATERS		
NAS	NTAC	EPA	NAS	NTAC	EPA	NAS	NTAC	EPA	NAS	NTAC	EPA	NAS	NTAC
Bioassays and organoleptic tests	excluded at levels which produce tainting	--	--	--	absent	absent	absent	--	--	none present			
same as EPA	1. No visible film 2. No oily odors 3. No deposits 4. Not to become effective toxicant	no visible oils	no visible oils	should be excluded	no visible oils	--	virtually absent	1. No visible film 2. No tainting 3. No deposits	same as EPA	same as NTAC fresh water			
--	--	--	--	--	0.3 mg/l 1.5 mg/l	0.3 mg/l 1.5 mg/l	0.15 mg/l	--	--	--	--	--	--
1/20 LC_{50} 0.2 mg/l (LAS)	1/7 48 hr. TLM 0.2 mg/l (LAS) 1/7 48 hr. TLM 1/7 48 hr. TLM 1.0 mg/l (ABS)	--	--	--	0.5 mg/l (ABS) NL NTA	.5MBA	--	--	--	--	--	--	--
1/20 LC_{50} 0.1 mg/l	--	--	--	--	0.001 mg/l	0.001 mg/l	0.001 mg/l	--	--	No change	--	--	--
1/20 LC_{50} 0.005 mg/l	Flo-thru bioassays	--	--	--	0.2 mg/l	0.2 mg/l	0.2 mg/l	1/10 LC_{50} 0.01 mg/l	1/10 LC_{50} 0.01 mg/l 0.05 mg/l	1/10 LC_{50}			

CONSTITUENT	AGRICULTURE (Irrigation)			AGRICULTURE (Livestock)			FRESHWATER (Aquatic Life)			FRESHWATER (Wild Life)		
	EPA	NAS	NTAC	EPA	NAS	NTAC	EPA	NAS	NTAC	EPA	NAS	NTAC
27. Phthalate esters	--	--	--	--	--	--	0.3 µg/l	0.3 µg/l		--	--	--
28. Polychlorinated biphenyls	--	--	--	--	--	--	0.002 µg/l 0.5 µg/l (Tissues)	0.01 µg/l 0.05 µg/l	--	No increase in present levels	No increase in present levels	--
29. Radioactivity	FDWS	FDWS	USPHS	FDWS	--	--	FDWS	NL	USPHS	--	PC/l Gross B 1000 Ra^{226} 3 sr9.0 10	FDWS
30. Coliforms (Total)	--	--	NL	5000/100 ml average 20,000/100 ml maximum	NL	NL	--	--	--	2000/100 ml	control *C. botulinum*	--
31. Coliforms (Fecal)	1000/100 ml	NL	NL	1000/100 ml monthly average 4000/100 ml individual sample	NL	1000/100 ml monthly average 4000/100 ml individual sample	--	--	--	20,000/ 100 ml	--	--

re)		FRESHWATER (Wild Life)			FRESHWATER (Public Supply)			MARINE WATER (Aquatic Life)			RECREATIONAL WATERS		
NAS	NTAC	EPA	NAS	NTAC	EPA	NAS	NTAC	EPA	NAS	NTAC	EPA	NAS	NTAC
0.3 µg/l		--	--	--	NL	--	--	--	--	--	--	--	--
0.01 µg/l 0.05 µg/l	--	No increase in present levels	No increase in present levels	--	NL	0.001 µg/l	--	--	--	--	--	--	--
NL	USPHS	--	PC/1 Gross B 1000 Ra^{226} 3 sr^{9} 0 10	FDHS	complex	PC/1 Gross B 1000 Ra^{226} 3 sr^{9}	FDHS	--	USPHS	--	--	--	--
--	--	2000/100 ml	control C. botulinum	--	10,000/ 100 ml	20,000/ 100 ml	10,000/ 100 ml	--	--	--	--	--	70/100 ml
--	--	20,000/ 100 ml	--	--	2,000/ 100 ml	2,000/ 100 ml	2,000/ 100 ml	--	--	--	same as NTAC	NL	primary contact 200/100 ml secondary contact 2,000/100 ml shellfish

CONSTITUENT	AGRICULTURE (Irrigation)			AGRICULTURE (Livestock)			FRESHWATER (Aquatic Life)				FRESHWATER (Wild Life)	
	EPA	NAS	NTAC	EPA	NAS	NTAC	EPA	NAS	NTAC		EPA	NAS
32. Temperature	NL	--	55°-85°F	--	--	--	complex EPA-NAS essentially same	--	1. Streams $\Delta T \leq 5°F$ Epilimnion Lakes $\Delta T \leq 3°F$ (based upon mo. $\bar{x}$ of maximum daily temperature) 2. Recommended maximum for various species 3. No addition to trout and salmon waters	Avoid disrupting natural patterns	--	--
33. D.O.	--	--	NL	--	--	--	--	Four levels of protection 4.0 minimum	1. Warm water $\geq 5.0°F$ except $> 4.0 - 5.0$ during short periods in any 24 hours (does not apply to hypolimnion of statified lakes) 2. ≥ 7.0 spawning ≥ 6.0 growth 5.0-6.0 short periods 4.0-5.0 in large streams up to 6 hours 3. ≥ 6.0 in hypolimnion of oligotrophic lakes		--	--

ATER ic Life) NAS	NTAC		FRESHWATER (Wild Life) EPA	NAS	NTAC	FRESHWATER (Public Supply) EPA	NAS	NTAC	MARINE WATER (Aquatic Life) EPA	NAS	NTAC	RECREATIONAL WATERS EPA	NAS	NTAC
--	1. Streams $\Delta T \leq 5°F$ Epilimnion Lakes $\Delta T \leq 3°F$ (based upon mo. $\bar{x}$ of maximum daily temperature) 2. Recommended maximum for various species 3. No addition to trout and salmon waters	Avoid disrupting natural patterns	--	--	Not to detract from patability or interfere with treatment	Not to detract from patability or interfere with treatment	no fixed criteria	Same as NTAC	Same as fresh water aquatic life	$\Delta T \leq 4°F$ Sept. - May $\Delta T \leq 1.5$ June - Aug. rate $\Delta T \leq 3°F$/hr. n. of L.I. and in N.W. (July - Supt) (Oct. - June)	86°F	NL	85°F primary contact recreational water	
Four levels of protection 4.0 minimum	1. Warm water $\leq 5.0°F$ except > 4.0 - 5.0 during short periods in any 24 hours (does not apply to hypolimnion of statified lakes) 2. ≤ 7.0 spawning ≤ 6.0 growth 5.0-6.0 short periods 4.0-5.0 in large streams up to 6 hours 3. ≤ 6.0 in hypolimnion of oligotrophic lakes		--	--	Same as aquatic life plus bottom must be aerobic to suppress botulism organisms	NL	NL	> 4.0°F monthly means > 3.0 individual sample	6.0 mg/l 4.0 mg/l	no specific reason	> 5.0 surface and coastal $\leq$ 4.0 estuarine tidal	--	--	--